APPENDIX
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OXYGEN EEQUIRED TO OXIDISE REDUCING AGENTS.
1 percent. Si requires 1*14 percent. 0, yielding 2'14 per cent. Si02 P „ ' 1-29 „ 0 „ 2-29 .
„ PaOfi Mn „ 0-29 „ 0 „ 1'29 „ MnO
CO
FORMULAE FROM TEXT.
Fe
1-33 0-29
0 0
2-33 1-29
FeO
Stale of approximate equilibrium between metal and slag is attained when slag contains about 10 per cent. Fe, i.e., 13 per cent. FeO, and 10 per cent. Mn, i.e., 13 per cent. MnO
EELATIVE EATIOS OF INDIVIDUAL SUBSTANCES IN THE SLAG.
1 per cent. P requires 3'61 per cent. CaO and yields 5*9 per cent. P.2Ca4Og .....
Eor each 1 per cent. P there must be present 0*3 per cent. Si02 for slag formation.....
Per 1 per cent. Si on complete decarburisation there must be 4-78 per cent, silicate slag, containing 20'92 per cent. Si02 (a) per 1 per cent. Si on partial decarburisation there must be 2*9 per cent, silicate slag containing 34*35 per cent. SiO^ 1 per cent. Si02 corresponds on complete decarburisation to 2-33 per cent. CaO and MgO.....
(a) 1 per cent. Si02 corresponds on partial decarburisation to 1-06 per cent. CaO and MgO.....
AMOUNT OP SLAG.
1 per cent. Si yields 10*23 per cent, final slag .... (1 per cent. P yields 5'9 per cent, final slag) .... C content of bath (assumed) yields 2*15 per cent, slag (taken on charge).....
(a) Each 1 per cent. SiOa on surface of charge produces 4*78 per cent, final slag.....
CHARGE SHRINKAGE.
C contained in bath produces loss of 0+0*2 per cent. Fe=l'2 per cent..... .
1 per cent. Si contained in bath produces loss of Si+1 percent. Fe=2 per cent.....
1 per cent. SiOa contained in bath produces loss of 0*5 per cent. Fe
P and Mn contained in bath produce loss of their own amounts
HEAT CONTENTS.
1 kg. pig iron—melted but not overheated . . 250 cals.
1 „ slag from cupola..... 375
1 ,, steel, casting heat..... 350
1 ,, slag, belonging to above 525
Heat absorbed liberating 002 from 1 kg. limestone . 180
CO •„ 1 „ 0 . . 800
„ „ decomposing 1 kg. limestone . . 425

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